Amendments to the Claims

1 (original). A polymer incarcerated Lewis acid metal catalyst comprising a Lewis acid metal and a crosslinked polymer, wherein the Lewis acid metal is incarcerated in the crosslinked polymer, the crosslinked polymer is obtained by crosslinking crosslinking groups contained in a crosslinkable polymer, the crosslinkable polymer contains at least one type of monomer unit having a hydrophobic substituent and a hydrophilic substituent having the crosslinking group, and the hydrophobic substituent contains an aromatic substituent.

2 (original). The catalyst of claim 1, wherein the crosslinkable polymer comprises at least one type of monomer unit containing a hydrophobic substituent and a hydrophilic substituent containing a crosslinking group and a monomer unit containing a hydrophobic substituent.

3 (original). The catalyst of claim 2, wherein the crosslinkable polymer comprises a monomer unit containing an aromatic substituent and a hydrophilic substituent containing a crosslinking group, a monomer unit containing a hydrophobic substituent other than an aromatic substituent and a hydrophilic substituent containing a crosslinking group and a monomer unit containing a hydrophobic substituent.

4 (currently amended). The catalyst of claim 1 ~~any one of claims 1 to 3~~, wherein the crosslinkable polymer comprises a monomer unit containing a hydrophilic substituent containing an epoxy group and a monomer unit containing a hydrophilic substituent containing a group that reacts with the epoxy group.

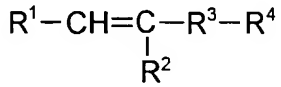
5 (original). The catalyst of claim 4, wherein the crosslinkable polymer comprises a monomer unit containing an aromatic substituent and a hydrophilic substituent containing an epoxy group, a monomer unit containing an aromatic substituent and a hydrophilic substituent containing a group that reacts with the epoxy group and a monomer unit containing a hydrophobic substituent.

6 (original). The catalyst of claim 4, wherein the crosslinkable polymer comprises a monomer unit containing an aromatic substituent and a hydrophilic substituent containing an epoxy group, a monomer unit containing a hydrophobic substituent other than an aromatic substituent and a hydrophilic substituent containing a group that reacts with the epoxy group and a monomer unit containing a hydrophobic substituent.

7 (original). The catalyst of claim 4, wherein the crosslinkable polymer comprises a monomer unit containing an aromatic substituent and a hydrophilic substituent containing a group that reacts with an epoxy group, a monomer unit containing a hydrophobic substituent other than an aromatic substituent and a hydrophilic substituent containing an epoxy group and a monomer unit containing a hydrophobic substituent.

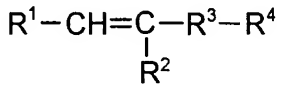
8 (currently amended). The catalyst of claim 4 ~~any one of claims 4 to 7~~, wherein the group that reacts with an epoxy group is at least one selected from a group comprising a hydroxyl group, an amino group, a thiol group and a carboxyl group.

9 (original). The polymer incarcerated Lewis acid metal catalyst of claim 1, wherein the crosslinkable polymer is obtained by polymerizing, as main monomers, a styrene monomer, a vinyl monomer represented by the general formula ~~(chemical formula 1) below~~



, wherein R^1 represents a hydrogen atom or an alkyl group having 1 to 6 carbon atoms, R^2 represents a hydrogen atom, an alkyl group having 1 to 8 carbon atoms or an aryl group containing less than 14 carbon atoms, R^3 represents an alkylene group having 1 to 6 carbon atoms, $-(CH_2)_n(OCH_2CHR^5)_m-$, $-(CH_2)_n(OCH_2C=O)_m-$ or $-(CH_2)_n(COCH_2)_m-$, wherein R^5 represents a hydrogen atom or a methyl group and n and m each independently represent integers 1 to 10, and R^4 represents an epoxy group,

and a vinyl monomer represented by the general formula ~~(chemical formula 1) below~~



, wherein R^1 to R^3 and n and m independently represent the same as above, and R^4 represents at least one reactive group selected from a group comprising a hydroxyl group, an amino group, a thiol group and a carboxyl group.

10 (currently amended). The catalyst of claim 1 ~~any one of claims 1 to 9~~ prepared by mixing an organic solution containing the crosslinkable polymer and the Lewis acid metal to prepare a polymer micelle incarcerating Lewis acid metal, and crosslinking the polymer micelle incarcerating Lewis acid metal.

11 (currently amended). The catalyst of claim 1 ~~any one of claims 1 to 10~~, wherein the Lewis acid metal is represented by MY_n, wherein M represents Cu, Zn, Fe, Sc or a lanthanoid element, Y represents a halogen atom, OAc, $OCOCF_3$, ClO_4, SbF_6, PF_6 or OSO_2CF_3 and n is 2 or 3.

12 (currently amended). ~~The use of the catalyst of any one of claims 1 to 10 for~~ An aldol ~~reactions~~, cyanolation ~~reactions~~, allylation ~~reactions~~, Michael ~~reactions~~, Mannich ~~reactions~~, Diels Alder ~~reactions~~ or Friedel Craft ~~reactions~~ reaction conducted in the presence of the catalyst of claim 1.

13 (new). The catalyst of claim 2, wherein the crosslinkable polymer comprises a monomer unit containing a hydrophilic substituent containing an epoxy group and a monomer unit containing a hydrophilic substituent containing a group that reacts with the epoxy group.

14 (new). The catalyst of claim 3, wherein the crosslinkable polymer comprises a monomer unit containing a hydrophilic substituent containing an epoxy group and a monomer unit containing a hydrophilic substituent containing a group that reacts with the epoxy group.

15 (new). The catalyst of claim 9 prepared by mixing an organic solution containing the crosslinkable polymer and the Lewis acid metal to prepare a polymer micelle incarcerating Lewis acid metal, and crosslinking the polymer micelle incarcerating Lewis acid metal.

16 (new). The catalyst of claim 9, wherein the Lewis acid metal is represented by MY_n, wherein M represents Cu, Zn, Fe, Sc or a lanthanoid element, Y represents a halogen atom, OAc, $OCOCF_3$, ClO_4, SbF_6, PF_6 or OSO_2CF_3 and n is 2 or 3.

17 (new). The catalyst of claim 10, wherein the Lewis acid metal is represented by MY_n, wherein M represents Cu, Zn, Fe, Sc or a lanthanoid element, Y represents a halogen atom, OAc, $OCOCF_3$, ClO_4, SbF_6, PF_6 or OSO_2CF_3 and n is 2 or 3.

18 (new). An aldol, cyanolation, allylation, Michael, Mannich, Diels Alder or Friedel Craft reaction conducted in the presence of the catalyst of claim 9.

19 (new). An aldol, cyanolation, allylation, Michael, Mannich, Diels Alder or Friedel Craft reaction conducted in the presence of the catalyst of claim 10.